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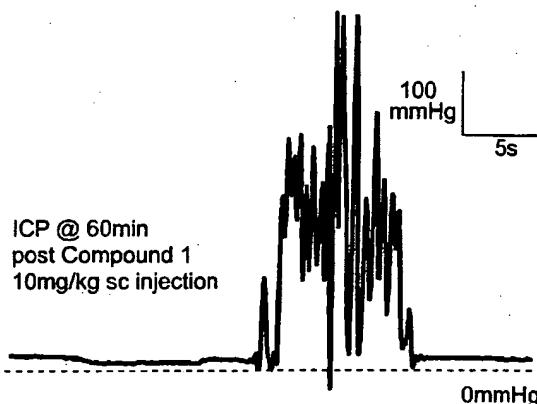
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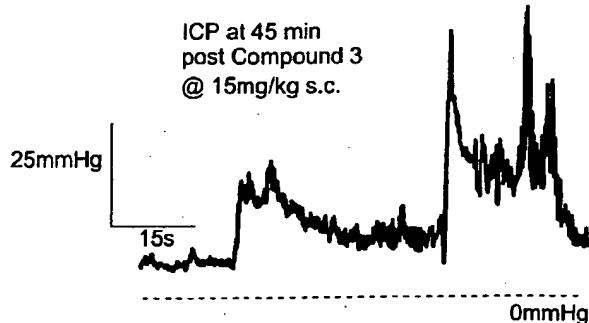
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[Continued on next page]

(54) Title: TREATMENT OF SEXUAL DYSFUNCTION WITH NON PEPTIDE BOMBESIN RECEPTOR ANTAGONISTS



(57) Abstract: Bombesin receptor antagonists have been found to be useful in the treatment of sexual dysfunction in both males and females. They may be selective BB1 antagonists or mixed BB1/BB2 antagonists. Combinations are disclosed of bombesin receptor antagonists with a range of other active compounds, for example PDE5 inhibitors, NEP inhibitors and lasofoxifene.



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IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

**Declaration under Rule 4.17:**

— *of inventorship (Rule 4.17(iv)) for US only*

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*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

## INTERNATIONAL SEARCH REPORT

Intern	Application No
PCT/GB 01/05018	

<b>A. CLASSIFICATION OF SUBJECT MATTER</b>				
IPC 7	A61K31/165	A61K31/395	A61K31/17	A61K31/18
				A61P15/10

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

IPC 7	A61K
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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, BIOSIS, CHEM ABS Data, MEDLINE, EMBASE, PASCAL, SCISEARCH

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 00 37462 A (HORWELL DAVID CHRISTOPHER ; LEWTHWAITE RUSSELL ANDREW (GB); RAPHY J) 29 June 2000 (2000-06-29) claim 7, 8 and 14 ---	1-12, 14, 36-41
Y		1-12, 14, 36-42
X	WO 98 07718 A (HORWELL DAVID CHRISTOPHER ; PRITCHARD MARTYN CLIVE (GB); WARNER LAM) 26 February 1998 (1998-02-26) claim 5-9, 12, 13, 17, 20 ---	1-12, 14-20, 36-41
		-/-

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

## \* Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
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"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

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Date of the actual completion of the international search

8 March 2002

Date of mailing of the international search report

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## INTERNATIONAL SEARCH REPORT

International Application No  
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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	ASHWOOD V ET AL: "PD 176252 - The First High Affinity Non-peptide Gastrin-Releasing Peptide (BB2) Receptor Antagonist" BIOORGANIC & MEDICINAL CHEMISTRY LETTERS, OXFORD, GB, vol. 8, no. 18, 22 September 1998 (1998-09-22), pages 2589-2594, XP004138276 ISSN: 0960-894X table I, II; paragraph bridging page 2589 and 2590 ---	1-12, 14-20, 36-41
X	WO 96 28214 A (HUREL STEVEN) 19 September 1996 (1996-09-19) page 3, line 15-36 ---	1, 36
X	DATABASE BIOSIS [Online] BIOSCIENCES INFORMATION SERVICE, PHILADELPHIA, PA, US; September 2000 (2000-09) KE H Z ET AL: "Co-treatment of lasifoxifene (CP-336,156) and estrogen inhibits estrogen's effect in the uterus but maintains the bone protective effects in ovariectomized rats." Database accession no. PREV200000405569 XP002192429 abstract & JOURNAL OF BONE AND MINERAL RESEARCH, vol. 15, no. Suppl. 1, September 2000 (2000-09), page S310 Twenty-Second Annual Meeting of the American Society for Bone and Mineral Research; Toronto, Ontario, Canada; September 22-26, 2000 ISSN: 0884-0431 ---	1-12,14, 41,42
X	WO 99 30697 A (WYLLIE MICHAEL GRANT :PFIZER PROD INC (US)) 24 June 1999 (1999-06-24) claim 1, 47, 48 ---	1-12,14, 36-41
X	WO 00 42955 A (PLACE VIRGIL A) 27 July 2000 (2000-07-27) examples 1, 2 page 1, line 5-9; claim 1 ---	1-12,14, 36-41
Y	WO 99 21562 A (VIVUS INC) 6 May 1999 (1999-05-06) claim 1 ---	1-12,14, 36-38, 41,42
Y	WO 99 21562 A (VIVUS INC) 6 May 1999 (1999-05-06) claim 1 ---	1-12,14, 36-39
		-/-

## INTERNATIONAL SEARCH REPORT

Intern - Application No  
PCT/GB 01/05018

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 00 37450 A (HERGENROEDER STEFAN ;BASF AG (DE); BAUMANN ERNST (DE); JANSEN ROLF) 29 June 2000 (2000-06-29) claim 5, 6 -----	1-12,14, 36-38,40

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/GB 01/05018

## Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1.  Claims Nos.: **39-47**  
because they relate to subject matter not required to be searched by this Authority, namely:  
**Rule 39.1(iv) PCT - Method for treatment of the human or animal body by therapy**
2.  Claims Nos.:  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3.  Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

**see additional sheet**

1.  As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2.  As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3.  As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4.  No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

**1(part)-14(part), 15-20, 36(part)-42(part)**

**Remark on Protest**

- The additional search fees were accompanied by the applicant's protest.  
 No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1(part)-14(part), 15-20, 36(part)-42(part)

bombesin receptor antagonists in general and beta-aryl-alpha-ureido-propionamides according to formula I and Ia of claim 15, 16 for use in the treatment of sexual disorders

2. Claims: claims 1(part)-14(part), 21-25, 36(part)-42(part)

beta-aryl-alpha-amino-propionamides according to formula II, IIa, b, c of claim 21-25 for use in the treatment of sexual disorders

3. Claims: claims 1(part)-14(part), 26(part)-29(part), 30, 31, 36(part)-42(part)

beta-aryl-alpha-amido-propionamides ( $X= -CO-$ ) according to formula III and IIIa of claim 26, 29 for use in the treatment of sexual disorders

4. Claims: claims 1(part)-14(part), 26(part)-29(part), 32, 33, 36(part)-42(part)

beta-aryl-alpha-carbamido-propionamides ( $X= -OCO-$ ) according to formula III and IIIa of claim 26, 29 for use in the treatment of sexual disorders

5. Claims: claims 1(part)-14(part), 26(part), 28(part), 29 (part), 36(part)-42(part)

beta-aryl-alpha-sulfinamido-propionamides ( $X= -SO-$ ) according to formula III and IIIa of claim 26, 29 for use in the treatment of sexual disorders

6. Claims: claims 1(part)-14(part), 26(part)-29(part), 34, 35, 36(part)-42(part)

beta-aryl-alpha-sulfonamido-propionamides ( $X= -SO2-$ ) according to formula III and IIIa of claim 26, 29 for use in the treatment of sexual disorders

**INTERNATIONAL SEARCH REPORT**

Information on patent family members

Internat'l Application No  
PCT/GB 01/05018

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